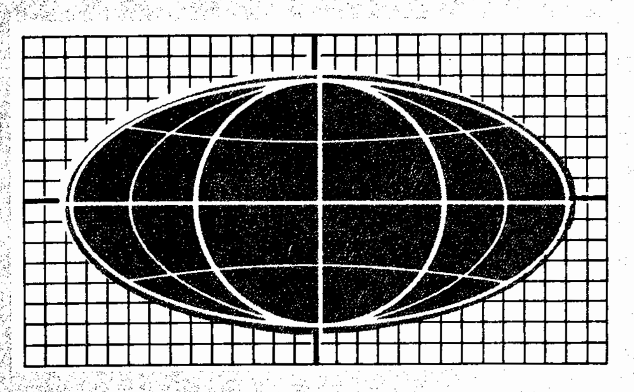


Agriculture in the United States and the Soviet Union:

A STATISTICAL COMPARISON

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This statistical study compares the structure, resource allocation, and performance of agriculture in the United States and Soviet Union. These indicators provide, at best, only general guidelines for judging agricultural performance. Data on geographic and climatic conditions, soil, farm management techniques, and institutional and political frameworks are not presented, but are reflected in the comparative tables.

The main Soviet farm area extends farther north than the U. S. grain belt; the Ukraine is at a latitude approximately the same as the spring wheat belt in the northern United States and Canada. This latitudinal position, coupled with low precipitation, results in a capricious climate that is sometimes severe and dry. These geographic factors have sharply limited the expansion of Soviet farm output since the growing and pasturing seasons are short and crop yields are low and unstable.

Land ownership is basically different in the United States and the Soviet Union. All land in the USSR is Government-owned and nearly all of it is socialized. The functions of agricultural production are guided by a central state plan operating through a complex of large collective farms, state farms, and auxiliary farm units attached to state enterprises. The collective farms occupy over half the total sown acreage; most of the remaining acreage is in state farms. The private sector, about 3 percent of total agricultural land, consists mainly of small plots tilled by collective and state farm members in their spare time. About one-third of total agricultural production comes from these plots, and the produce is either consumed by the farmers' families or sold to the state or through farmers markets. American farms are small by comparison with the Soviet complexes; most are operated by the farm-owner and his family, sometimes with one or two hired workers.

The functions of management are difficult to compare because of differences in the size of Soviet and American farms. Soviet collective farm chairmen and state farm directors probably bear the closest resemblance to managers of American corporate-type farms. However, Soviet farm managers are not fully responsible for making economic decisions directly affecting the output and profits of the enterprises. Their position is

to respond to directives rather than to make independent decisions. Recent Soviet interest in economic accountability suggests a trend toward more managerial autonomy in the actual production process. The difficult job of pricing farm products, however, remains in the Soviet Government's domain rather than as a function of consumer demand. Although the U. S. Government helps to shape the broad activities of production, marketing, pricing, and trade through support of farm prices, income, and foreign trade expansion, internal operations are conducted by private farmers with minor exceptions.

The present Soviet regime is promoting greater efficiency in agriculture by increasing the level of inputs and by improving incentives of the rural labor force. These measures include financial concessions to farmers, more emphasis on livestock products in the Soviet diet, and expanded use of fertilizers, pesticides, irrigation, and drainage.

Although the Soviets have recently narrowed the gap in many areas of agricultural efficiency, production, and performance, numerous deficiencies are still evident in the following tables. The United States, in comparison, uses less labor and land but more capital to achieve greater output. Farm efficiency, measured in terms of output per unit of input, is substantially higher in the United States than in the USSR for land, livestock, and labor. Yields per acre of most crops are lower in the USSR than in the United States.

Foreign trade in farm commodities is far more important for the United States, the world's largest exporter and second largest importer of agricultural products, than for the Soviet Union. Both countries have adequate food supplies, in terms of calories per person, but the structure of the respective diets differs greatly. The Soviet diet still places great emphasis on cereal products and potatoes, whereas American diets are, to a great extent, composed of vegetables, fruits, and foods of animal origin.

A comparison of Soviet and U. S. agriculture for a single year may be misleading because of the vagaries of weather. In 1966, almost ideal weather conditions in both the winter and spring grain regions of the USSR resulted in output far above the previous record of 1964. The United States, however, experienced several periods of adverse weather in 1966 which, along with reduced planted acreage, resulted in a slight decline from the 1965 record output of grains.

For a review of the current situation in Soviet Agriculture, consult:

The Europe and Soviet Union Agricultural Situation. Econ. Res. Serv., U. S. Dept. Agr., ERS-Foreign 220, April 5, 1968.

Agricultural Policies in Europe and the Soviet Union, Econ. Res. Serv., U. S. Dept. Agr., Foreign Agr. Econ. Rpt. No. 46, June 1968.

Table 1.--Agricultural resources, United States and Soviet Union, specified years

Item	Year	Unit	United States	Soviet Union	USSR as percentage of U.S.
					Percent
Population, July 1	1966	Millions	1/196.9	2/233.2	118
Civilian labor force (work experience)	do.	do.	3/86.3	4/118.4	137
Annual average employment	do.	do.	5/72.9	4/110.0	151
Annual average employment in agriculture	do.	do.	6/5.2	4/39.8	765
Farm share of total employment: (annual average)	do.	Percent	7.1	36.2	510
Sown cropland	do.	Million acres	7/298	8/511	171
Sown cropland per capita	do.	Acres	1.5	2.2	147
Tractors on farms, January 1	1967	Thousands	9/4,815	10/1,660	34
Motor trucks on farms January 1	do.	do.	9/3,100	10/1,017	33
Grain combines on farms	do.	do.	9/880	10/531	60
Agricultural consumption of electricity	1966	Billion kwh.	11/29.1	12/23.2	80
Use of commercial fertilizer in terms of principal plant nutrients:					
Total	do.	1,000 short tons	13/12,445	14/7,707	62
Per acre of sown area	do.	Pounds	84	30	36

1/ U.S. Department of Commerce, Statistical Abstract of the United States: 1967, 88th ed., Washington, D.C., 1967, p. 5. 2/ USSR Central Statistical Directorate, Narodnoye khozyaystvo SSSR v 1965 g., Moscow, 1966, p. 7. 3/ U.S. Department of Labor, Work Experience of the Population in 1966, Washington, D.C., Oct. 1967, p. 4. 4/ U.S. Department of Commerce, Estimates and Projections of the Labor Force and Civilian Employment in the U.S.S.R., 1950-1975, Washington, D.C., June 1967, p. 15. 5/ Statistical Abstract ... op. cit., p. 221. 6/ U.S. Department of Agriculture, Agricultural Statistics 1967, Washington, D.C., 1967, p. 528. 7/ Agricultural Statistics ... op. cit., p. 531. 8/ USSR Central Statistical Directorate, Strana sovetov za 50 let, Moscow, 1967, p. 129. 9/ Agricultural Statistics ... op. cit., p. 522. 10/ Strana sovetov ... op. cit., p. 157. 11/ USDA, Statistical Reporting Service, Agricultural Prices, Washington, D.C., Dec. 1967, p. 25. Average consumption in June times 12. 12/ Strana sovetov ... op. cit., p. 154. 13/ USDA, Statis. Rptg. Serv., Consumption of Commercial Fertilizers in the United States, Washington, D.C., May 1967, p. 16. 14/ Strana sovetov ... op. cit., p. 161.

Table 2.--Farm numbers and size, and selected data per farm, United States and Soviet Union, 1966

Item	Unit	U.S. farms	Soviet Union	
			Collective farms	State farms
Total	Number	1/3,239,000	2/36,493	2/12,196
Land area per farm	Acres	1/351	3/31,425	3/120,632
Sown area per farm	do.	4/92	5/6,919	5/18,038
Workers per farm	Number	6/1.6	7/417	7/651
Land area per worker 8/	Acres	219	75	185
Sown area per worker 9/	do.	58	17	28

1/ USDA, Statis. Rptg. Serv., Number of Farms and Land in Farms, Washington, D.C., Jan. 10, 1968, p. 1.
2/ USSR Central Statistical Directorate, SSSR v tsifrakh v 1966 godu, Moscow, 1967, p. 112.
3/ Strana sovetov ... op. cit., p. 127. Total land area divided by number of farms. State category includes land of state farms and other state agricultural enterprises.
4/ Total sown area divided by number of farms.
5/ Strana sovetov ... op. cit., p. 117.
6/ Average annual employment divided by number of farms.
7/ Strana sovetov ... op. cit., p. 117. Households per collective farm and workers per state farm.
8/ Land area per farm divided by workers per farm.
9/ Sown area per farm divided by workers per farm.

Table 3.--Crop acreage, United States and Soviet Union, 1966

Crop	United States 1/	Soviet Union 2/	USSR as percentage of U.S.
	--------1,000 acres--------		Percent
Corn, grain	56,933	7,907	14
Wheat	49,867	172,970	347
Rye	1,275	33,606	2,636
Oats	17,861	17,791	100
Barley	10,205	47,937	470
Sorghum grain in U.S.; pulses in USSR	12,813	14,579	114
Rice	1,967	3/598	30
Cotton	9,552	6,079	64
Soybeans for beans	36,546	4/2,088	6
Sunflowers	5/73	12,355	16,924
Peanuts harvested for nuts	1,418	6/	---
Flax 7/	2,576	3,459	134
Sugarbeets	1,161	9,390	809
Sugarcane, for sugar and seed	625	6/	---
Tobacco	977	8/348	36
Potatoes	1,464	20,756	1,418
Sweetpotatoes	157	6/	---
Vegetables 9/	3,421	3,459	101
Fruits (including citrus), grapes, berries, and nuts	10/3,046	11/6,323	208
Citrus	12/932	8/20	2
Hay, all	13/65,140	14/79,072	121

1/ USDA, Statis. Rptg. Serv., Crop Production, 1967 Annual Summary, Washington, D.C., Dec. 19, 1967, pp. 37-40, unless otherwise noted. Area harvested. 2/ SSSR v tsifrakh ... op. cit., pp. 84-85, unless otherwise noted. Sown area after completion of spring planting. 3/ Sel'skaya zhizn', June 7, 1967. 4/ RSFSR Central Statistical Directorate, Narodnoye khozyaystvo RSFSR v 1965 g., Moscow, 1966, p. 191. Data are for RSFSR, where most soybean area is located. 5/ USDA, Econ. Res. Serv., Fats and Oils Situation, FOS-239, Washington, D.C., Sept. 28, 1967, p. 27. Data are for Minnesota and North Dakota, where most commercial production is located. 6/ Negligible. 7/ Flaxseed in the United States, fiber flax in the USSR. 8/ USDA estimate. 9/ Commercial acreage only of 27 crops in the United States; total acreage of all vegetables, except melons, in the Soviet Union. 10/ Agricultural Statistics ... op. cit., pp. 275, 298 for major berries. Crop Production ... op. cit., p. 46, for other fruits, nuts, and grapes. Total includes bearing area or commercial area harvested of 26 major fruits, grapes, berries, and nuts. 11/ Narodnoye khozyaystvo SSSR ... op. cit., p. 349. 1965 data on bearing area. 12/ Crop Production ... op. cit., p. 46. Bearing area. 13/ Ibid., p. 66. 14/ Strana sovetov ... op. cit., p. 129. Sown annual and perennial grasses, including grain cut for green feed.

Table 4.--Yield per acre and production of major crops, United States and Soviet Union, 1966

Crop	Unit	Yield per acre: U.S. 1/	Yield per acre: USSR 2/	USSR as percentage of U.S.	Unit	Production: U.S. 1/	Production: USSR	USSR as percentage of U.S.
				Percent				Percent
Corn, grain	Bushels	72.3	33.9	47	1,000 bushels	4,117,355	3/267,702	7
Wheat	do.	26.3	18.1	69	do.	1,311,702	3/3,123,155	238
Rye	do.	21.8	14.1	65	do.	27,775	3/472,416	1,701
Oats	do.	44.9	29.0	65	do.	801,327	3/516,705	64
Barley	do.	38.5	23.0	60	do.	393,186	3/1,102,296	280
Sorghum grain in U.S.; pulses in USSR	do.	55.8	15.9	28	do.	714,992	3/231,812	32
Rice, rough	Pounds	4,322	2,354	54	1,000 short tons	4,251	3/704	17
Cotton, lint	do.	480	4/738	154	1,000 bales	9,575	5/9,341	98
Soybeans for beans	Bushels	25.4	10.5	41	1,000 bushels	928,481	3/21,900	2
Sunflowerseed	Pounds	6/894	1,008	113	1,000 short tons	6/33	3/6,228	18,873
Peanuts harvested for nuts	do.	1,700	n.a.	---	do.	1,205	7/	---
Flaxseed	Bushels	9.1	8/5.2	57	1,000 bushels	23,390	8/22,400	96
Sugarbeets	Short tons	17.5	8.7	50	1,000 short tons	20,342	5/81,570	401
Sugarcane for sugar and seed	do.	39.2	n.a.	---	do.	24,515	7/	---
Sugar production		---	---	---	do.	9/6,187	10/10,736	174
Tobacco	Pounds	1,933	1,161	60	1,000 pounds	1,888,497	3/404,100	21
Fiber flax	do.	n.a.	294	---	1,000 short tons	n.a.	5/508	---
Potatoes	cwt.	210	84	40	1,000 cwt.	306,902	3/1,744,059	568
Sweetpotatoes	do.	87	n.a.	---	do.	13,697	7/	---
Vegetables 11/	Short tons	12/5.7	5.7	100	1,000 short tons	19,650	5/19,731	100
Citrus	do.	13/12.4	n.a.	---	1,000 boxes	14/11,553	n.a.	---
Grapes	do.	n.a.	n.a.	---	1,000 short tons	14/3,734	15/3,724	100
Total fruits (including citrus), grapes, berries, and nuts	do.	n.a.	n.a.	---	do.	16/22,370	15/8,603	38
Hay	do.	17/1.86	18/.67	36	do.	17/121,027	18/53,350	44

1/ Crop Production ... op. cit., pp. 3-5, less otherwise noted. Area harvested. 2/ Derived from production and area unless otherwise noted. 3/ USDA estimate. 4/ Entire area is irrigated. 5/ Strana sovetov ... op. cit., p. 131. 6/ Fats and Oils ... op. cit., p. 27. Data are for Minnesota and North Dakota, where most commercial production is located. 7/ Negligible. 8/ USDA, Foreign Agr. Serv., World Agricultural Production and Trade, Washington, D.C., Feb. 1968, p. 31. 9/ Continental beets and cane, including Hawaii, Puerto Rico, and Virgin Islands. 10/ Strana sovetov ... op. cit., p. 102. Production from domestic beets and imported Cuban raw sugar. 11/ Commercial production of 27 crops in the United States; total output of all vegetables, except melons, in the Soviet Union. 12/ Derived from production and area. 13/ Crop Production ... op. cit., p. 40. Data are for four major citrus fruits. 14/ Ibid., p. 44. Data are for six major citrus fruits. 15/ Strana sovetov ... op. cit., p. 147. 16/ Crop Production ... op. cit., pp. 43, 45. Includes 24 major fruits, grapes, berries, and nuts. 17/ Ibid., p. 66. All hay. 18/ Sown area only. Production datum is USDA estimate.

n.a. = not available.

Table 5.--Livestock numbers, selected years, United States and Soviet Union

Livestock	Beginning of year	United States 1/	Soviet Union 2/	USSR as percentage of U.S.
		------ Million head ---------		Percent
All cattle	1967	108.5	97.1	89
Cows	1967	3/49.8	4/41.2	83
Hogs	1967	51.0	58.0	114
Sheep	1967	23.7	135.5	572
Poultry	1966	5/399.9	6/490.5	123

1/ Agricultural Statistics ... op. cit. pp. 362-406.
2/ Strana sovetov ... op. cit., p. 150, unless otherwise noted.
3/ Cows, 2 years and older, included in cattle.
4/ All cows included in cattle.
5/ Chickens and turkeys only, excluding commercial broilers.
6/ Narodnoye khozyaystvo SSSR ... op. cit., p. 375. All poultry.

Table 6.--Production of livestock commodities, United States and Soviet Union, 1966

Commodity	Unit	United States	Soviet Union	USSR as percentage of U.S.
				Percent
Beef and veal	Mil. lb.	1/20,604	2/8,245	40
Pork	do.	1/11,328	2/7,440	66
Mutton, lamb, and goat	do.	1/650	2/1,587	244
Poultry meat	do.	3/7,596	2/1,764	23
Lard 4/	do.	1,932	1,800	93
Margarine and shortening	do.	5,291	6/1,321	25
Tallow and grease 4/	do.	5,026	4/530	11
Milk (cows)	do.	7/120,230	2/147,990	123
Butter	do.	8/1,128	6/2,297	204
Eggs	Billion	9/66.4	10/31.7	48
Wool 11/	Mil. lb.	12/250	10/818	327

1/ Agricultural Statistics ... op. cit., p. 418.
2/ USDA estimate.
3/ Agricultural Statistics ... op. cit., p. 492. Total production certified under Federal inspection
4/ USDA, Foreign Agr. Serv., Foreign Agriculture Circular, FFO 9-67, Washington, D.C., Oct. 1967, pp. 24-25.
5/ Agricultural Statistics ... op. cit., pp. 170-171.
6/ Strana sovetov ... op. cit., p. 102.
7/ Agricultural Statistics ... op. cit., p. 445.
8/ USDA, Econ. Res. Serv., Dairy Situation, DS-318, Washington, D.C., Nov. 6, 1967, p. 18.
9/ Agricultural Statistics ... op. cit., p. 501.
10/ Strana sovetov ... op. cit., p. 149.
11/ Greasy basis.
12/ Agricultural Statistics ... op. cit., p. 412.

Table 7.--Area of major grains, United States and Soviet Union, average 1961-65, annual 1966

Item	Average 1961-65			1966		
	United States 1/	Soviet Union 2/	USSR as percentage of U.S.	United States 1/	Soviet Union 3/	USSR as percentage of U.S.
	1,000 acres	1,000 acres	Percent	1,000 acres	1,000 acres	Percent
Feed grains:						
Corn, grain	56,658	14,544	26	56,933	7,907	14
Oats	21,162	17,989	85	17,861	17,791	100
Barley	11,135	45,269	407	10,205	47,937	470
Sorghum grain and pulses 4/	12,131	19,657	162	12,813	14,579	119
4 feed grains	101,086	97,459	96	97,812	88,214	90
Food grains:						
Wheat	48,017	164,569	343	49,867	172,970	347
Rye	1,655	40,277	2,434	1,275	33,606	2,636
Buckwheat	5/46	4,537	9,863	n.a.	4,695	---
Rice	1,742	393	22	1,967	598	30
4 food grains	51,460	209,776	408	6/53,109	211,869	399
Total 8 grains	152,546	307,235	201	6/150,921	285,504	189

1/ Crop Production ... op. cit., p. 36.
2/ Narodnoye khozyaystvo SSSR 1965 ... op. cit., p. 284, and Narodnoye khozyaystvo SSSR 1962, p. 247.
3/ SSSR v tsifrakh ... op. cit., p. 84.
4/ Sorghum grain for U.S.; pulses for USSR.
5/ 1961-64 only.
6/ Excludes buckwheat in U.S.

n.a. = not available.

Table 8.--Yields per acre of major grains, United States and Soviet Union, average 1961-65, annual 1966

Item	Average 1961-65			1966		
	United States 1/	Soviet Union 2/	USSR as percentage of U.S.	United States 1/	Soviet Union 2/	USSR as percentage of U.S.
	Bushels	Bushels	Percent	Bushels	Bushels	Percent
Feed grains:						
Corn, grain	66.3	25.2	38	72.3	33.9	47
Oats	45.2	20.3	45	44.9	29.0	65
Barley	36.2	17.9	49	38.5	23.0	60
Sorghum grain and pulses 3/	45.0	12.6	28	55.8	15.9	28
Food grains:						
Wheat	25.3	11.2	44	26.3	18.1	69
Rye	19.7	13.3	68	21.8	14.1	65
Buckwheat	2/19.5	7.1	36	n.a.	8.1	--
Rice	86.5	43.3	50	94.5	51.8	55
	Pounds	Pounds		Pounds	Pounds	
Average yield:						
4 feed grains	2,881	882	31	3,222	1,111	34
4 food grains	1,582	681	43	1,670	1,029	62
Total 8 grains	2,438	744	31	2,662	1,107	42

1/ Crop Production ... op. cit., p. 39, unless otherwise noted.
2/ Derived from tables 7 and 9.
3/ Sorghum grain for U.S.; pulses for USSR.

n.a. = not available.

Table 9.--Production of major grains, United States and Soviet Union, average 1961-65, annual 1966

Item	Average 1961-65			1966		
	United States 1/	Soviet Union 2/	USSR as percentage of U.S.	United States 1/	Soviet Union 2/	USSR as percentage of U.S.
	Million bushels		Percent	Million bushels		Percent
Feed grains:						
Corn, grain	3,758	367	10	4,117	268	7
Oats	953	365	38	801	517	65
Barley	398	810	204	393	1,102	280
Sorghum grain and pulses 3/	548	248	45	715	232	32
Food grains:						
Wheat	1,214	1,844	152	1,312	3,123	238
Rye	33	535	1,621	28	472	1,686
Buckwheat	4/.9	32	3,556	n.a.	38	---
Rice	151	17	11	189	31	16
	Million short tons			Million short tons		
4 feed grains	145	43	30	158	49	31
4 food grains	41	71	173	5/44	109	248
Total 8 grains	186	114	61	5/202	158	78

1/ Crop Production ... op. cit., p. 41.
2/ USDA estimate.
3/ Sorghum grain for U.S.; pulses for USSR.
4/ 1961-64 only
5/ Excludes buckwheat in U.S.

n.a. = not available.

Table 10.--Production of five major grains and total grain, Soviet Union, 1958-67

Year	Total grain 1/		5 major grains 2/	
	USDA estimates 3/	Soviet official estimates 4/	USDA estimates 3/	Soviet official estimates 4/
	Million metric tons			
1958	114.2	134.7	109.2	129.0
1959	94.2	5/119.5	90.6	5/115.3
1960	95.5	125.5	89.4	118.5
1961	109.4	130.8	102.2	122.5
1962	109.6	140.2	99.2	128.5
1963	90.0	107.5	80.3	96.5
1964	121.6	152.1	107.4	135.9
1965	100.4	121.1	91.0	110.4
1966	145.9	171.2	135.3	159.1
1967	6/124.8	7/147.6	6/114.3	135.5

1/ Wheat, rye, barley, oats, corn for grain, millet, buckwheat, rice, pulses.
2/ Wheat, rye, barley, oats, corn for grain.
3/ Usable grain.
4/ Bunker weight, i.e., as originally harvested, not dried or cleaned.
Strana sovetov ... op. cit., p. 133, unless otherwise noted.
5/ Narodnoye khozyaystvo SSSR 1962 ... op. cit., p. 235.
6/ Preliminary USDA estimates.
7/ Pravda, January 25, 1968.